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**FLUOR**

**Memorandum**

M8141-SLF-05-044

To: S. J. Trent A0-21 *[Signature]* Date: January 20, 2005

From: S. L. Fitzgerald, Manager  
WSCF Analytical Chemistry

cc: w/Attachments w/o Attachments  
T. F. Dale S3-30 D. J. Hart S3-30  
H. K. Meznarich S3-30 M. A. Neely S3-30  
P. D. Mix S3-30 H. S. Rich S3-28  
J. E. Trechter S3-30 L. C. Swanson E6-35  
File/LB

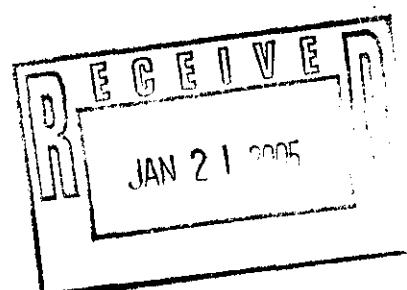
Subject: FINAL RESULTS 200-PW2/200-PW-4 OU – BOREHOLE SOIL SAMPLING – SAMPLE  
DELIVERY GROUP WSCF20042436 – SAF NUMBER F03-006

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001,  
October 31, 2002  
(2) HNF-SD-CD-QAPP-017, Rev. 6, Waste Sampling & Characterization Facility Quality  
Assurance Plan

This letter contains a narrative (Attachment 1) for sample delivery group WSCF20042436, the analytical results (Attachment 2), and the sample receipt information (Attachment 3).

SLF/grf

Attachments 3



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**ATTACHMENT 1**

**NARRATIVE**

Consisting of 7 pages  
Including cover page

<b>Sample Delivery Group</b>	<b>WSCF20042436</b>
<b>Sample Matrix</b>	<b>SOLID</b>
<b>Sample Visual</b>	<b>N/A</b>
<b>SAF Number</b>	<b>F03-006</b>
<b>Data Deliverable</b>	<b>Summary Report</b>

### **Introduction**

One (1) 200-PW-2/200-PW-4 OU Borehole Soil Sampling/216-S-7, 153' – 155.5', GRP sample (B1B580) was received at the WSCF Laboratory on December 15, 2004. The sample was analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program- Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

### **Analytical Methodology for Requested Analyses**

#### **Inorganic**

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. Analytical work was performed with no deviations to the approved method.
- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

## **Organic**

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- TPH Gas Range by WDOE Method NWTPH-Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

## **Radiochemistry**

- All RadChem analyses (AEA (Plutonium, Americium, Uranium, Neptunium) GEA, Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

## **Inorganic Comments**

**Ammonia** - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B579 (SDG# 20042392, SAF# F03-006).

All QC controls are within the established limits.

**Anions** - The hold times for Nitrite and Nitrate were not met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Preparation Date: 10-jan-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B582 (SDG# 20042519, SAF# F03-006).
- Chloride – The Duplicate Relative Percent Difference exceeded established laboratory limits. Sample B1B580 result was below the detection limit and U-flagged.
- Nitrate and Sulfate – Sample B1B580 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All other QC controls are within the established limits.

**Cyanide** - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19943 (SDG# 20042435, SAF# F04-015).

All QC controls are within the established limits.

**ICP-MS Metals** – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 16 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BR60 (SDG# 20042450, SAF# F04-033).
- Arsenic, Mercury and Silver - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Silver – The Laboratory Control Sample recovery was below established laboratory limits but within manufacturer's limits. Sample B1B580 result was not flagged.
- Mercury – The Laboratory Control Sample recovery exceeded established laboratory limits. Sample B1B580 result was below the detection limit and U-flagged.

All other QC controls are within the established limits.

**pH** - The hold time for this analysis was met. All laboratory QC controls are within the established limits.

**Percent Solids** – analyzed for organic analysis correction only.

#### **Organic Comments**

- Sample results were moisture corrected and reported on a dry-weight basis.

**Semi-VOA** – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 22 through 25 for QC details. Analytical Note:

- Preparation Date: 21-dec-2004.

All QC controls are within the established limits.

**TPHD-WA** - The hold times for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 26 for QC details. Analytical Notes:

- Preparation Date: 21-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19943 (SDG# 20042435, SAF# F04-015).

All QC controls are within the established limits.

**TPHG-WA** - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 27 for QC details. Analytical Notes:

- Preparation Date: 28-dec-2004.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19943 (SDG# 20042435, SAF# F04-015).
- Total Petroleum Hydrocarbons Gas – The Laboratory Control Sample recovery was slightly below established laboratory limits. Sample B1B580 result was U-flagged.

All other QC controls are within the established limits.

**VOA** – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 28 through 30 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19943 (SDG# 20042435, SAF# F04-015).

All QC controls are within the established limits.

### **Radiochemistry Comments**

**RadChem** – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 33 through 38 for QC details. Analytical Notes:

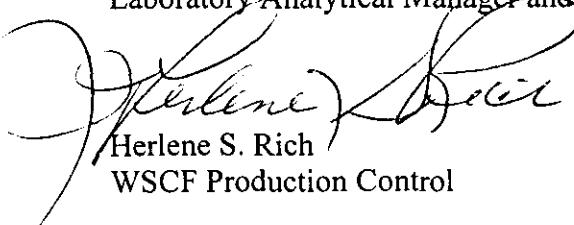
- Americium-241, GEA, Strontium-89/90, Plutonium-239/240 and Uranium-238 - Duplicate QC samples were analyzed on sample# B19943 (SDG# 20042435, SAF# F04-015).

All QC controls are within the established limits.

### Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	93.8
LCS		Sr-85	95.0
B19943	W040002627	Sr-85	97.3
DUPLICATE	W040002627	Sr-85	89.4
B1B580	W0400002628	Sr-85	99.4
BLANK		U-232	68.1
LCS		U-232	77.0
B19943	W040002627	U-232	73.3
DUPLICATE	W040002627	U-232	61.3
B1B580	W040002628	U-232	79.9
BLANK		Pu-242	13.9
LCS		Pu-242	23.9
B19943	W040002627	Pu-242	93.3
DUPLICATE	W040002627	Pu-242	92.3
B1B580	W040002628	Pu-242	84.3
BLANK		Am-243	71.9
LCS		Am-243	75.9
B19943	W040002627	Am-243	26.4
DUPLICATE	W040002627	Am-243	94.8
B1B580	W040002628	Am-243	85.4

This Summary Report is in compliance with the SOW, both technically and for completeness.  
Release of the data contained in this hard copy report has been authorized by the WSCF  
Laboratory Analytical Manager and Client Services, as verified by the following signature.



Herlene S. Rich  
WSCF Production Control

Abbreviations

Hg – mercury  
IC – ion chromatography  
ICP – inductively coupled plasma  
ICP/AES – ICP/atomic emission spectroscopy  
ICP/MS – ICP/mass spectrometry  
Total U – total uranium  
AT/TB – total alpha/total beta  
AEA – Alpha Energy Analysis  
WTPH-G – Total Hydrocarbons-Gasoline

Am – americium  
Cm - curium  
Pu – plutonium  
Np – neptunium  
GEA – gamma energy analysis  
H3 – Tritium  
Sr – Strontium 89, 90  
WTPH-D – Total Hydrocarbons-Diesel  
TSS – Total Suspended Solids

M8141-SLF-05-044

ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 36 pages  
Including cover page

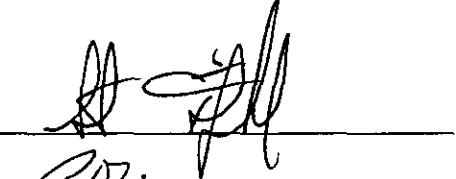
**WSCF**  
**ANALYTICAL RESULTS REPORT**

for

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical: 

Client Services: 

*All results are reported on an "as received" basis unless otherwise noted in the comment section.*

Confidentiality Notice: The information contained in this report is privileged and confidential information intended only for the use of the addressee. If the reader of this report is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone at (509) 373-7020.

Contract#: FH-EIS-2003-MEM-001

Report#: WSCF20042436

Report Date: 18-jan-2005

Report WGPP/ver. 1.1

Groundwater Remediation Program

Page 1

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent      **Project:** F03-006: 200-PW-2/PW-4      **Group #:** WSCF20042436

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample	Receive
<b>Inorganic</b>												
W040002628	B1B580	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	12/29/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	NH4-N	Nitrogen in ammonium	SOIL	LA-503-401		6.25	mg/kg	50.00	0.20	01/07/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	TS	Total solids	SOIL	LA-519-412		89.5	%	1.00	0.0	12/20/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	PH	pH Measurement	SOIL	LA-212-411		9.59	pH	1.00	0.010	12/16/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	16887-00-6	Chloride	SOIL	LA-533-410	U	< 2.60	mg/kg	50.00	2.6	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410	B	1.67	mg/kg	50.00	0.65	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 2.70	mg/kg	50.00	2.7	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410	B	12.4	mg/kg	50.00	5.0	01/10/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-02-0	Nickel	SOIL	LA-505-412		12.5	mg/kg	9.45	4.7	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-22-4	Silver	SOIL	LA-505-412	U	< 1.89	mg/kg	9.45	1.9	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-36-0	Antimony	SOIL	LA-505-412	U	< 4.72	mg/kg	9.45	4.7	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-39-3	Barium	SOIL	LA-505-412		82.8	mg/kg	9.45	1.9	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-41-7	Beryllium	SOIL	LA-505-412	U	< 2.84	mg/kg	9.45	2.8	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412	U	< 0.945	mg/kg	9.45	0.94	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-47-3	Chromium	SOIL	LA-505-412	U	< 2.84	mg/kg	9.45	2.8	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-50-8	Copper	SOIL	LA-505-412		16.4	mg/kg	9.45	4.7	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7439-92-1	Lead	SOIL	LA-505-412	U	< 11.3	mg/kg	9.45	11	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7439-97-6	Mercury	SOIL	LA-505-412	U	< 0.945	mg/kg	9.45	0.94	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-61-1	Uranium	SOIL	LA-505-412	U	< 0.945	mg/kg	9.45	0.94	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7440-38-2	Arsenic	SOIL	LA-505-412		7.09	mg/kg	9.45	2.8	12/21/04 12/15/04 12/15/04
W040002628	B1B580	TRENT	7782-49-2	Selenium	SOIL	LA-505-412	U	< 2.84	mg/kg	9.45	2.8	12/21/04 12/15/04 12/15/04

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

**RQ=Result Qualifier**

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1.1**

**Groundwater Remediation Program**

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# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Ammonia (N) by IC

SAF Number: F03-006  
 Sample Date: 12/13/04  
 Receive Date: 12/13/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002593

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Ammonia (N) by IC	7664-41-7	1.27e+00	6.107	RPD	01/07/05	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	3.55e-01	86.165	% Recov	01/07/05	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	3.79e-01	91.990	% Recov	01/07/05	75.000	125.000	

## BATCH QC

BLANK	Ammonia (N) by IC	7664-41-7	<4.00e-3	n/a	mg/L	01/07/05	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<4.00e-3	n/a	mg/L	01/07/05	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	7.94e+01	96.359	% Recov	01/07/05	80.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: Anions by Ion Chromatography

SAF Number: F03-006

Sample Date: 12/22/04

Receive Date: 12/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002824

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	5.56e+00	22.623	RPD	01/10/05	0.000	20.000	
DUP	Fluoride	16984-48-8	<1.15e0	n/a	RPD	01/10/05	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	<9.50e-1	n/a	RPD	01/10/05	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	1.78e+00	1.130	RPD	01/10/05	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<2.70e0	n/a	RPD	01/10/05	0.000	20.000	U
DUP	Sulfate	14808-79-8	1.70e+01	8.451	RPD	01/10/05	0.000	20.000	
MS	Chloride	16887-00-6	1.04e+00	104.000	% Recov	01/10/05	75.000	125.000	
MS	Fluoride	16984-48-8	4.72e-01	95.547	% Recov	01/10/05	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	5.00e-01	100.000	% Recov	01/10/05	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.44e-01	98.448	% Recov	01/10/05	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	7.55e-01	77.915	% Recov	01/10/05	75.000	125.000	
MS	Sulfate	14808-79-8	1.80e+00	90.000	% Recov	01/10/05	75.000	125.000	
MSD	Chloride	16887-00-6	1.02e+00	102.000	% Recov	01/10/05	75.000	125.000	
MSD	Fluoride	16984-48-8	4.83e-01	97.773	% Recov	01/10/05	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	5.07e-01	101.400	% Recov	01/10/05	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.53e-01	100.443	% Recov	01/10/05	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	8.17e-01	84.314	% Recov	01/10/05	75.000	125.000	
MSD	Sulfate	14808-79-8	1.84e+00	92.000	% Recov	01/10/05	75.000	125.000	

## BATCH QC

BLANK	Chloride	16887-00-6	<5.20e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Chloride	16887-00-6	<5.20e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	01/10/05	0.000	300.000	U

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: Anions by Ion Chromatography

SAF Number: F03-006

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	01/10/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	01/10/05	0.000	300.000	U
LCS	Chloride	16887-00-6	2.02e+02	101.000	% Recov	01/10/05	80.000	120.000	
LCS	Fluoride	16984-48-8	9.11e+01	92.300	% Recov	01/10/05	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.77e+01	97.700	% Recov	01/10/05	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	8.71e+01	96.670	% Recov	01/10/05	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.97e+02	101.651	% Recov	01/10/05	80.000	120.000	
LCS	Sulfate	14808-79-8	3.88e+02	97.243	% Recov	01/10/05	80.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: Cyanide by Midi/Spectrophotom

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

MS	Cyanide by Midi/Spectrophotom	57-12-5	97.7	97.700	% Recov	12/29/04	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	95.2	95.200	% Recov	12/29/04	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	95.200	2.592	RPD	12/29/04	0.000	20.000	

## BATCH QC

BLANK	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/29/04	-4.000	4.000	
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/29/04	-4.000	4.000	
LCS	Cyanide by Midi/Spectrophotom	57-12-5	103.1	103.100	% Recov	12/29/04	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 12/14/04

Receive Date: 12/14/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002599

## BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	369.9	92.475	% Recov	12/21/04	70.000	130.000
MS	Cadmium	7440-43-9	396.4	99.100	% Recov	12/21/04	70.000	130.000
MS	Chromium	7440-47-3	281.19	70.297	% Recov	12/21/04	70.000	130.000
MS	Copper	7440-50-8	368.36	92.090	% Recov	12/21/04	70.000	130.000
MS	Mercury	7439-97-6	20.31	101.550	% Recov	12/21/04	70.000	130.000
MS	Lead	7439-92-1	386.2	96.550	% Recov	12/21/04	70.000	130.000
MS	Uranium	7440-61-1	396.9	99.225	% Recov	12/21/04	70.000	130.000
MSD	Silver	7440-22-4	388	97.000	% Recov	12/21/04	70.000	130.000
MSD	Cadmium	7440-43-9	411.1	102.775	% Recov	12/21/04	70.000	130.000
MSD	Chromium	7440-47-3	289.69	72.422	% Recov	12/21/04	70.000	130.000
MSD	Copper	7440-50-8	383.96	95.990	% Recov	12/21/04	70.000	130.000
MSD	Mercury	7439-97-6	21.18	105.900	% Recov	12/21/04	70.000	130.000
MSD	Lead	7439-92-1	399.2	99.800	% Recov	12/21/04	70.000	130.000
MSD	Uranium	7440-61-1	417	104.250	% Recov	12/21/04	70.000	130.000

Lab ID: W040002619

## BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	374.79	93.698	% Recov	12/21/04	70.000	130.000
MS	Arsenic	7440-38-2	379.45	94.862	% Recov	12/21/04	70.000	130.000
MS	Barium	7440-39-3	408.67	102.168	% Recov	12/21/04	70.000	130.000
MS	Beryllium	7440-41-7	366.9	91.725	% Recov	12/21/04	70.000	130.000
MS	Cadmium	7440-43-9	393.6	98.400	% Recov	12/21/04	70.000	130.000
MS	Chromium	7440-47-3	349.1	87.275	% Recov	12/21/04	70.000	130.000
MS	Copper	7440-50-8	375.24	93.810	% Recov	12/21/04	70.000	130.000
MS	Mercury	7439-97-6	20.35	101.750	% Recov	12/21/04	70.000	130.000
MS	Nickel	7440-02-0	371.25	92.812	% Recov	12/21/04	70.000	130.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 12/14/04

Receive Date: 12/14/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Lead	7439-92-1	384.5	96.125	% Recov	12/21/04	70.000	130.000	
MS	Antimony	7440-36-0	412.9	103.225	% Recov	12/21/04	70.000	130.000	
MS	Selenium	7782-49-2	404.4	101.100	% Recov	12/21/04	70.000	130.000	
MS	Uranium	7440-61-1	386	96.500	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	387.29	96.823	% Recov	12/21/04	70.000	130.000	
MSD	Arsenic	7440-38-2	405.95	101.487	% Recov	12/21/04	70.000	130.000	
MSD	Barium	7440-39-3	410.17	102.543	% Recov	12/21/04	70.000	130.000	
MSD	Beryllium	7440-41-7	386.7	96.675	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	412.2	103.050	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	358.8	89.700	% Recov	12/21/04	70.000	130.000	
MSD	Copper	7440-50-8	397.34	99.335	% Recov	12/21/04	70.000	130.000	
MSD	Mercury	7439-97-6	21.55	107.750	% Recov	12/21/04	70.000	130.000	
MSD	Nickel	7440-02-0	389.65	97.412	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	401.5	100.375	% Recov	12/21/04	70.000	130.000	
MSD	Antimony	7440-36-0	427.3	106.825	% Recov	12/21/04	70.000	130.000	
MSD	Selenium	7782-49-2	436.5	109.125	% Recov	12/21/04	70.000	130.000	
MSD	Uranium	7440-61-1	404.2	101.050	% Recov	12/21/04	70.000	130.000	

Lab ID: W040002681

## BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	372.3	93.075	% Recov	12/21/04	70.000	130.000	
MS	Arsenic	7440-38-2	394.7	98.675	% Recov	12/21/04	70.000	130.000	
MS	Barium	7440-39-3	368.95	92.237	% Recov	12/21/04	70.000	130.000	
MS	Beryllium	7440-41-7	385	96.250	% Recov	12/21/04	70.000	130.000	
MS	Cadmium	7440-43-9	394.8	98.700	% Recov	12/21/04	70.000	130.000	
MS	Chromium	7440-47-3	346	86.500	% Recov	12/21/04	70.000	130.000	
MS	Copper	7440-50-8	382.17	95.543	% Recov	12/21/04	70.000	130.000	
MS	Mercury	7439-97-6	20.24	101.200	% Recov	12/21/04	70.000	130.000	
MS	Nickel	7440-02-0	370.96	92.740	% Recov	12/21/04	70.000	130.000	
MS	Lead	7439-92-1	392.3	98.075	% Recov	12/21/04	70.000	130.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Antimony	7440-36-0	406.4	101.600	% Recov	12/21/04	70.000	130.000	
MS	Selenium	7782-49-2	412	103.000	% Recov	12/21/04	70.000	130.000	
MS	Uranium	7440-61-1	398.02	99.505	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	389.9	97.475	% Recov	12/21/04	70.000	130.000	
MSD	Arsenic	7440-38-2	404.4	101.100	% Recov	12/21/04	70.000	130.000	
MSD	Barium	7440-39-3	384.25	96.062	% Recov	12/21/04	70.000	130.000	
MSD	Beryllium	7440-41-7	371.5	92.875	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	409.2	102.300	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	342	85.500	% Recov	12/21/04	70.000	130.000	
MSD	Copper	7440-50-8	383.67	95.918	% Recov	12/21/04	70.000	130.000	
MSD	Mercury	7439-97-6	21.71	108.550	% Recov	12/21/04	70.000	130.000	
MSD	Nickel	7440-02-0	379.86	94.965	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	403.3	100.825	% Recov	12/21/04	70.000	130.000	
MSD	Antimony	7440-36-0	414.6	103.650	% Recov	12/21/04	70.000	130.000	
MSD	Selenium	7782-49-2	425.2	106.300	% Recov	12/21/04	70.000	130.000	
MSD	Uranium	7440-61-1	406.82	101.705	% Recov	12/21/04	70.000	130.000	
SPK-RPD	Silver	7440-22-4	97.475	4.618	RPD	12/21/04	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	101.100	2.428	RPD	12/21/04	0.000	20.000	
SPK-RPD	Barium	7440-39-3	96.062	4.063	RPD	12/21/04	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	92.875	3.569	RPD	12/21/04	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	102.300	3.582	RPD	12/21/04	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	85.500	1.163	RPD	12/21/04	0.000	20.000	
SPK-RPD	Copper	7440-50-8	95.918	0.392	RPD	12/21/04	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	108.550	7.008	RPD	12/21/04	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	94.965	2.371	RPD	12/21/04	0.000	20.000	
SPK-RPD	Lead	7439-92-1	100.825	2.765	RPD	12/21/04	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	103.650	1.998	RPD	12/21/04	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	106.300	3.153	RPD	12/21/04	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	101.705	2.187	RPD	12/21/04	0.000	20.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>BATCH QC</b>									
BLANK	Silver	7440-22-4	0.34	0.340	ug/L	12/21/04			
BLANK	Arsenic	7440-38-2	0.3	0.300	ug/L	12/21/04			
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L	12/21/04			U
BLANK	Beryllium	7440-41-7	<0.3	n/a	ug/L	12/21/04			U
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	12/21/04			U
BLANK	Chromium	7440-47-3	<0.3	n/a	ug/L	12/21/04			U
BLANK	Copper	7440-50-8	<0.5	n/a	ug/L	12/21/04			U
BLANK	Mercury	7439-97-6	0.14	0.140	ug/L	12/21/04			
BLANK	Nickel	7440-02-0	<0.5	n/a	ug/L	12/21/04			U
BLANK	Lead	7439-92-1	<1.2	n/a	ug/L	12/21/04			U
BLANK	Antimony	7440-36-0	<0.5	n/a	ug/L	12/21/04			U
BLANK	Selenium	7782-49-2	<0.3	n/a	ug/L	12/21/04			U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	12/21/04			U
LCS	Silver	7440-22-4	95.05	94.109	% Recov	12/21/04	110.000	170.000	
LCS	Arsenic	7440-38-2	155.9	93.353	% Recov	12/21/04	82.000	142.000	
LCS	Barium	7440-39-3	352.1	92.658	% Recov	12/21/04	79.000	123.000	
LCS	Beryllium	7440-41-7	65.91	93.622	% Recov	12/21/04	82.000	128.000	
LCS	Cadmium	7440-43-9	99.18	93.566	% Recov	12/21/04	88.000	127.000	
LCS	Chromium	7440-47-3	173.1	87.868	% Recov	12/21/04	50.000	126.000	
LCS	Copper	7440-50-8	68.49	93.184	% Recov	12/21/04	61.000	134.000	
LCS	Mercury	7439-97-6	2.71	143.386	% Recov	12/21/04	75.000	114.000	
LCS	Nickel	7440-02-0	86.78	90.114	% Recov	12/21/04	84.000	125.000	
LCS	Lead	7439-92-1	69.89	95.478	% Recov	12/21/04	87.000	120.000	
LCS	Antimony	7440-36-0	150.2	62.324	% Recov	12/21/04	61.000	135.000	
LCS	Selenium	7782-49-2	83.18	100.217	% Recov	12/21/04	83.000	145.000	
LCS	Uranium	7440-61-1	411.8	102.950	% Recov	12/21/04	89.000	107.000	

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent      **Group #:** WSCF20042436  
**Project:** F03-006: 200-PW-2/PW-4

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample	Receive
<b>Organic</b>												
W040002628	B1B580	TRENT	TPHGASOLINE	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	12/28/04	12/15/04
W040002628	B1B580	TRENT	100-02-7	SOIL	LA-523-456	U	< 720	ug/kg	1.00	7.2e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	106-46-7	SOIL	LA-523-456	U	< 350	ug/kg	1.00	3.5e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	108-95-2	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	120-82-1	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	121-14-2	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	129-00-0	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	59-50-7	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	621-64-7	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	83-32-9	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	87-86-5	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	95-57-8	SOIL	LA-523-456	U	< 160	ug/kg	1.00	1.6e+02	01/05/05	12/15/04
W040002628	B1B580	TRENT	126-73-8	SOIL	LA-523-456	U	< 74.0	ug/kg	1.00	74	01/05/05	12/15/04
W040002628	B1B580	TRENT	75-35-4	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	79-01-6	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	71-43-2	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	108-88-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	108-90-7	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	75-34-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	100-41-4	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	100-42-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	10061-01-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	10061-02-6	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	107-06-2	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	108-10-1	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04
W040002628	B1B580	TRENT	124-48-1	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04	12/15/04

**MDL= Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

**RQ= Result Qualifier**

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1.1**

**Groundwater Remediation Program**

**Page 2**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent      **Group #:** WSCF20042436  
**Project:** F03-006: 200-PW-2/PW-4

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		Unit	DF	MDL	Analyze Sample	Receive	
					Method	RQ						
W040002628	B1B580	TRENT	127-18-4	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	1330-20-7	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	540-59-0	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	56-23-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	591-78-6	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	67-64-1	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	67-66-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	71-55-6	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	74-83-9	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	74-87-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-00-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-01-4	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-09-2	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-15-0	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-25-2	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	75-27-4	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	78-87-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	78-93-3	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	79-00-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	79-34-5	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	12/29/04 12/15/04 12/15/04	
W040002628	B1B580	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.20e+03	ug/kg	1.00	4.2e+03	01/03/05 12/15/04 12/15/04
W040002628	B1B580	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.20e+03	ug/kg	1.00	4.2e+03	01/03/05 12/15/04 12/15/04

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

**RQ=Result Qualifier**

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 1.1*

*Groundwater Remediation Program*

*Page 3*

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W040002628</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
MS	1,2,4-Trichlorobenzene	120-82-1	3272.7	87.900	% Recov	01/05/05	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	3068.4	82.400	% Recov	01/05/05	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	3097.8	83.200	% Recov	01/05/05	59.000	106.000	
MS	2-Fluorophenol	367-12-4	3355.8	90.100	% Recov	01/05/05	42.000	105.000	
MS	Acenaphthene	83-32-9	3632.0	97.600	% Recov	01/05/05	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	5162.5	92.500	% Recov	01/05/05	61.000	106.000	
MS	2-Chlorophenol	95-57-8	4724.7	84.600	% Recov	01/05/05	66.000	106.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	3631.4	97.500	% Recov	01/05/05	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	3589.3	96.400	% Recov	01/05/05	56.000	122.000	
MS	Phenol	108-95-2	5558.4	99.500	% Recov	01/05/05	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	3270.7	87.900	% Recov	01/05/05	64.000	111.000	
MS	4-Nitrophenol	100-02-7	5313.1	95.100	% Recov	01/05/05	32.000	118.000	
MS	Pentachlorophenol	87-86-5	4712.8	84.400	% Recov	01/05/05	62.000	114.000	
MS	Phenol-d5	4165-62-2	3695.8	99.300	% Recov	01/05/05	54.000	120.000	
MS	Pyrene	129-00-0	3138.7	84.300	% Recov	01/05/05	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	3485.7	93.600	% Recov	01/05/05	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	3151.9	84.700	% Recov	01/05/05	35.000	150.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	3260.1	87.600	% Recov	01/05/05	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	3117.0	83.800	% Recov	01/05/05	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	3135.0	84.300	% Recov	01/05/05	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	3424.3	92.000	% Recov	01/05/05	42.000	105.000	
MSD	Acenaphthene	83-32-9	3641.4	97.900	% Recov	01/05/05	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	5154.0	92.300	% Recov	01/05/05	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	4811.4	86.200	% Recov	01/05/05	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	3599.8	96.700	% Recov	01/05/05	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	3531.1	94.900	% Recov	01/05/05	56.000	122.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	5613.4	101.000	% Recov	01/05/05	42.000	111.000	
MSD	Nitrobenzene-d5	4165-60-0	3300.8	88.700	% Recov	01/05/05	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	5087.6	91.200	% Recov	01/05/05	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	5274.6	94.500	% Recov	01/05/05	62.000	114.000	
MSD	Phenol-d5	4165-62-2	3847.4	103.000	% Recov	01/05/05	54.000	120.000	
MSD	Pyrene	129-00-0	3096.6	83.200	% Recov	01/05/05	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	3522.4	94.700	% Recov	01/05/05	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	3150.6	84.700	% Recov	01/05/05	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	87.600	0.342	RPD	01/05/05	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	83.800	1.685	RPD	01/05/05	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	84.300	1.313	RPD	01/05/05	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	92.000	2.087	RPD	01/05/05	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	97.900	0.307	RPD	01/05/05	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	92.300	0.216	RPD	01/05/05	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	86.200	1.874	RPD	01/05/05	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	96.700	0.824	RPD	01/05/05	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	94.900	1.568	RPD	01/05/05	0.000	20.000	
SPK-RPD	Phenol	108-95-2	101.000	1.496	RPD	01/05/05	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	88.700	0.906	RPD	01/05/05	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	91.200	4.187	RPD	01/05/05	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	94.500	11.291	RPD	01/05/05	0.000	20.000	
SPK-RPD	Phenol-d5	4165-62-2	103.000	3.658	RPD	01/05/05	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	83.200	1.313	RPD	01/05/05	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	94.700	1.168	RPD	01/05/05	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	84.700	0.000	RPD	01/05/05	0.000	20.000	
SURR	2-Fluorophenol	367-12-4	2992.3	80.400	% Recov	01/05/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3740.2	101.000	% Recov	01/05/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	3188.8	85.700	% Recov	01/05/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3453.7	92.800	% Recov	01/05/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	2988.4	80.300	% Recov	01/05/05	24.000	122.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3155.5	84.800	% Recov	01/05/05	35.000	150.000	
<b>BATCH QC</b>									
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 290	n/a	ug/Kg	01/05/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 310	n/a	ug/Kg	01/05/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 67	n/a	ug/Kg	01/05/05			U
BLANK	2-Fluorophenol	367-12-4	2836.8	85.100	% Recov	01/05/05	42.000	105.000	
BLANK	Acenaphthene	83-32-9	< 67	n/a	ug/Kg	01/05/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 67	n/a	ug/Kg	01/05/05			U
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg	01/05/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 67	n/a	ug/Kg	01/05/05			U
BLANK	2-Fluorobiphenyl	321-60-8	3389.2	102.000	% Recov	01/05/05	56.000	122.000	
BLANK	Phenol	108-95-2	< 100	n/a	ug/Kg	01/05/05			U
BLANK	Nitrobenzene-d5	4165-60-0	2947.9	88.400	% Recov	01/05/05	64.000	111.000	
BLANK	4-Nitrophenol	100-02-7	< 650	n/a	ug/Kg	01/05/05			U
BLANK	Pentachlorophenol	87-86-5	< 300	n/a	ug/Kg	01/05/05			U
BLANK	Phenol-d5	4165-62-2	3225.7	96.800	% Recov	01/05/05	54.000	120.000	
BLANK	Pyrene	129-00-0	< 67	n/a	ug/Kg	01/05/05			U
BLANK	Tributyl phosphate	126-73-8	< 67	n/a	ug/Kg	01/05/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	2612.2	78.400	% Recov	01/05/05	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	3111.0	93.300	% Recov	01/05/05	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	2929.4	87.900	% Recov	01/05/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	2720.8	81.600	% Recov	01/05/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	2823.4	84.700	% Recov	01/05/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	3086.1	92.600	% Recov	01/05/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	3251.4	97.500	% Recov	01/05/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	4796.8	95.900	% Recov	01/05/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	4202.4	84.000	% Recov	01/05/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	3066.1	92.000	% Recov	01/05/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	3087.5	92.600	% Recov	01/05/05	58.000	109.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date:  
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Phenol	108-95-2	4718.0	94.400	% Recov	01/05/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	2789.5	83.700	% Recov	01/05/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	4781.5	95.600	% Recov	01/05/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	5007.2	100.000	% Recov	01/05/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	2902.5	87.100	% Recov	01/05/05	59.000	116.000	
LCS	Pyrene	129-00-0	2683.1	80.500	% Recov	01/05/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	3120.4	93.600	% Recov	01/05/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	2972.2	89.200	% Recov	01/05/05	60.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

MS	ortho-Terphenyl	Surr	84-15-1	25403	98.100	% Recov	01/04/05	70.000	130.000
MS	Total Pet. Hydrocarbons Diesel		TPHDIESEL	131300	101.000	% Recov	01/04/05	75.000	125.000
MSD	ortho-Terphenyl	Surr	84-15-1	26324	102.000	% Recov	01/03/05	70.000	130.000
MSD	Total Pet. Hydrocarbons Diesel		TPHDIESEL	130940	101.000	% Recov	01/03/05	75.000	125.000
SPK-RPD	ortho-Terphenyl	Surr	84-15-1	102.000	3.898	RPD	01/03/05	0.000	20.000
SPK-RPD	Total Pet. Hydrocarbons Diesel		TPHDIESEL	101.000	0.000	RPD	01/03/05	0.000	20.000

Lab ID: W040002628

## BATCH QC ASSOCIATED WITH SAMPLE

SURR	ortho-Terphenyl	Surr	84-15-1	23816	85.300	% Recov	01/03/05	70.000	130.000
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## BATCH QC

BLANK	Kerosene		TPHKEROSENE	< 3800	n/a	ug/Kg	01/03/05		U
BLANK	ortho-Terphenyl	Surr	84-15-1	19254	77.000	% Recov	01/03/05	70.000	130.000
BLANK	Total Pet. Hydrocarbons Diesel		TPHDIESEL	< 3800	n/a	ug/Kg	01/03/05		U
LCS	Kerosene		TPHKEROSENE	116200	93.000	% Recov	01/04/05	70.000	130.000
LCS	ortho-Terphenyl	Surr	84-15-1	21428	85.700	% Recov	01/04/05	70.000	130.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: NWTPh-GX TPH Gasoline Range

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	RPD	12/28/04	0.000	20.000	U
MS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3000	83.333	% Recov	12/28/04	50.000	150.000	
MSD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3100	86.111	% Recov	12/28/04	50.000	150.000	
SPK-RPD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	86.111	3.279	RPD	12/28/04	0.000	20.000	

## BATCH QC

BLANK	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	mg/L	12/28/04	0.000	300.000	U
LCS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	1083	84.875	% Recov	12/28/04	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: VOA Ground Water Protection

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

MS	1,1-Dichloroethene	75-35-4	51.930	100.000	% Recov	12/29/04	63.000	117.000	
MS	Benzene	71-43-2	56.890	110.000	% Recov	12/29/04	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	107.30	103.000	% Recov	12/29/04	84.000	116.000	
MS	Chlorobenzene	108-90-7	58.900	114.000	% Recov	12/29/04	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	117.60	113.000	% Recov	12/29/04	82.000	136.000	
MS	Toluene-d8	2037-26-5	111.40	107.000	% Recov	12/29/04	89.000	119.000	
MS	Toluene	108-88-3	56.080	108.000	% Recov	12/29/04	76.000	120.000	
MS	Trichloroethene	79-01-6	53.130	102.000	% Recov	12/29/04	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	50.850	98.000	% Recov	12/29/04	63.000	117.000	
MSD	Benzene	71-43-2	58.570	113.000	% Recov	12/29/04	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	105.50	102.000	% Recov	12/29/04	84.000	116.000	
MSD	Chlorobenzene	108-90-7	58.230	112.000	% Recov	12/29/04	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	119.10	115.000	% Recov	12/29/04	82.000	136.000	
MSD	Toluene-d8	2037-26-5	110.10	106.000	% Recov	12/29/04	89.000	119.000	
MSD	Toluene	108-88-3	56.000	108.000	% Recov	12/29/04	76.000	120.000	
MSD	Trichloroethene	79-01-6	54.450	105.000	% Recov	12/29/04	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	98.000	2.020	RPD	12/29/04	0.000	25.000	
SPK-RPD	Benzene	71-43-2	113.000	2.691	RPD	12/29/04	0.000	25.000	
SPK-RPD	4-Bromofluorobenzene	460-00-4	102.000	0.976	RPD	12/29/04	0.000	25.000	
SPK-RPD	Chlorobenzene	108-90-7	112.000	1.770	RPD	12/29/04	0.000	25.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	115.000	1.754	RPD	12/29/04	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	106.000	0.939	RPD	12/29/04	0.000	25.000	
SPK-RPD	Toluene	108-88-3	108.000	0.000	RPD	12/29/04	0.000	25.000	
SPK-RPD	Trichloroethene	79-01-6	105.000	2.899	RPD	12/29/04	0.000	25.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: VOA Ground Water Protection

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W040002628</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
SURR	4-Bromofluorobenzene	460-00-4	115.50	103.000	% Recov	12/29/04	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	127.30	114.000	% Recov	12/29/04	80.000	134.000	
SURR	Toluene-d8	2037-26-5	120.50	108.000	% Recov	12/29/04	80.000	126.000	
<b>BATCH QC</b>									
BLANK	1,1-Dichloroethane	75-34-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,2-Dichloroethane	107-06-2	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	2-Hexanone	591-78-6	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Acetone	67-64-1	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Bromodichloromethane	75-27-4	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	4-Bromofluorobenzene	460-00-4	52.060	104.000	% Recov	12/29/04	71.000	125.000	
BLANK	Bromoform	75-25-2	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Carbon disulfide	75-15-0	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Carbon tetrachloride	56-23-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Dibromochloromethane	124-48-1	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Chloroform	67-66-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Chloroethane	75-00-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	59.070	118.000	% Recov	12/29/04	80.000	134.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: VOA Ground Water Protection

SAF Number: F03-006

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	1,2-Dichloropropane	78-87-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Ethylbenzene	100-41-4	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	2-Butanone	78-93-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Styrene	100-42-5	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Xylenes (total)	1330-20-7	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Toluene-d8	2037-26-5	55.560	111.000	% Recov	12/29/04	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	12/29/04			U
BLANK	Vinyl chloride	75-01-4	< 2.0	n/a	ug/Kg	12/29/04			U
LCS	1,1-Dichloroethene	75-35-4	52.190	104.000	% Recov	12/30/04	70.000	130.000	
LCS	Benzene	71-43-2	56.530	113.000	% Recov	12/30/04	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	104.70	105.000	% Recov	12/30/04	71.000	125.000	
LCS	Chlorobenzene	108-90-7	59.020	118.000	% Recov	12/30/04	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	118.00	118.000	% Recov	12/30/04	80.000	134.000	
LCS	Toluene-d8	2037-26-5	109.10	109.000	% Recov	12/30/04	80.000	126.000	
LCS	Toluene	108-88-3	56.930	114.000	% Recov	12/30/04	70.000	130.000	
LCS	Trichloroethene	79-01-6	53.990	108.000	% Recov	12/30/04	70.000	130.000	

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent      **Group #:** WSCF20042436  
**Project:** F03-006: 200-PW-2/PW-4

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		Unit	DF	MDL	Analyze Sample	Receive
					Method	RQ					
<b>Radiochemistry</b>											
W040002628	B1B580	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471		0.0330	pCi/g	1.00	0.014
W040002628	B1B580	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471	+-	0.017	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	U	6.33e-03	pCi/g	1.00	0.012
W040002628	B1B580	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	8.1e-03	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481	U	7.82e-03	pCi/g	1.00	0.012
W040002628	B1B580	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	8.2e-03	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481	U	-4.67e-03	pCi/g	1.00	0.035
W040002628	B1B580	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	0.022	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481	U	-0.0216	pCi/g	1.00	0.036
W040002628	B1B580	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	0.022	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U	2.08e-03	pCi/g	1.00	0.050
W040002628	B1B580	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	0.021	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	13982-63-3	Radium-226	SOIL	LA-508-481		0.539	pCi/g	1.00	0.024
W040002628	B1B580	TRENT	E,T,C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	0.091	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	15262-20-1	Radium-228	SOIL	LA-508-481		0.627	pCi/g	1.00	0.040
W040002628	B1B580	TRENT	E,T,C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-481	+-	0.11	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	9.30e-04	pCi/g	1.00	2.5e-03
W040002628	B1B580	TRENT	E,T,C	Np-237 by AEA Total Cntg Error	SOIL	LA-508-471	+-	9.3e-03	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	U	1.90e-03	pCi/g	1.00	0.044
W040002628	B1B580	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471	+-	1.9e-03	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	0.0140	pCi/g	1.00	0.018
W040002628	B1B580	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471	+-	0.014	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	SR-RAD	Strontrium-89/90	SOIL	LA-508-415	U	-0.250	pCi/g	1.00	0.20
W040002628	B1B580	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415	+-	0.38	pCi/g	1.00	0.0
W040002628	B1B580	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471		0.230	pCi/g	1.00	5.2e-03
W040002628	B1B580	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471	+-	0.071	pCi/g	1.00	0.0

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

**RQ=Result Qualifier**

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 1.1*

*Groundwater Remediation Program*

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:**  
**Project:**

Steve Trent  
F03-006: 200-PW-2/PW-4

**Group #:** WSCF20042436

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		Result	Unit	DF	MDL	Analyze Sample	Receive	
					Method	RQ							
W040002628	B1B580	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	0.0190	pCi/g	1.00	5.6e-03	01/13/05	12/15/04	
W040002628	B1B580	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471	+-	pCi/g	1.00	0.0	01/13/05	12/15/04	
W040002628	B1B580	TRENT	U-238	Uranium-238	SOIL	LA-508-471	0.230	pCi/g	1.00	5.2e-03	01/13/05	12/15/04	
W040002628	B1B580	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471	+-	0.071	pCi/g	1.00	0.10	01/13/05	12/15/04

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

**RQ=Result Qualifier**

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated;      + - Indicates more than six qualifier symbols

*Report WGPP/ver. 1.1*

*Groundwater Remediation Program*

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Americium by AEA

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Americium-241	14596-10-2	2.9e-02	12.903	RPD	01/12/05	0.000	20.000	
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## BATCH QC

BLANK	Americium-241	14596-10-2	3.2e-02	0.032	pCi/g	01/12/05	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.3e +01	89.397	% Recov	01/13/05	75.000	125.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

SAF Number: F03-006

Sample Date: 12/15/04

Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Cobalt-60	10198-40-0	U8.28e-04	n/a	RPD	12/29/04	0.000	20.000	
DUP	Cesium-137	10045-97-3	U-6.91e0	n/a	RPD	12/29/04	0.000	20.000	
DUP	Europium-152	14683-23-9	U1.33e-02	n/a	RPD	12/29/04	0.000	20.000	
DUP	Europium-154	15585-10-1	U-1.58e-2	n/a	RPD	12/29/04	0.000	20.000	
DUP	Europium-155	14391-16-3	4.54e-02	n/a	RPD	12/29/04	0.000	20.000	

## BATCH QC

BLANK	Cobalt-60	10198-40-0	U1.81e-3	n/a	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U1.03e-3	n/a	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U-9.7e-4	n/a	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U7.84e-4	n/a	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U-4.6e-3	n/a	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Radium-226	13982-63-3	6.39e-02	0.064	pCi/g	12/27/04	-10.000	1000.000	
BLANK	Radium-228	15262-20-1	3.50e-02	0.035	pCi/g	12/27/04	-10.000	1000.000	
LCS	Cobalt-60	10198-40-0	4.35e +03	103.819	% Recov	12/28/04	80.000	120.000	
LCS	Cesium-137	10045-97-3	3.89e +03	108.659	% Recov	12/28/04	80.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Neptunium by AEA

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002628

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Neptunium-237	13994-20-2	U-4.6E-03	n/a	RPD	01/13/05	0.000	25.000
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## BATCH QC

BLANK	Neptunium-237	13994-20-2	3.2e-03	0.003	pCi/g	01/13/05	-10.000	1000.000
LCS	Neptunium-237	13994-20-2	83.1	83.100	% Recov	01/13/05	75.000	125.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Plutonium Isotopes by AEA

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Pu-239/240 by AEA	PU-239/240	U1.7e-03	n/a	RPD	01/12/05	0.000	20.000
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## BATCH QC

BLANK	Pu-239/240 by AEA	PU-239/240	U1.9e-02	n/a	pCi/g	01/12/05	-10.000	1000.000
LCS	Pu-239/240 by AEA	PU-239/240	4.7e+01	95.528	% Recov	01/12/05	75.000	125.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Strontium 89/90

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
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Lab ID: W040002627

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Strontium-89/90	SR-RAD	5.7e-01	n/a	RPD	12/29/04	0.000	20.000
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## BATCH QC

BLANK	Strontium-89/90	10098-97-2	3.2e-01	0.320	pCi/g	12/29/04	-10.000	300.000
LCS	Strontium-89/90	10098-97-2	72.7	102.250	% Recov	12/29/04	80.000	120.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042436  
 Matrix: SOLID  
 Test: Uranium Isotopes by AEA

SAF Number: F03-006  
 Sample Date: 12/15/04  
 Receive Date: 12/15/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W040002627</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
DUP	Uranium-238	U-238	1.4e-01	0.000	RPD	01/13/05	0.000	20.000	
<b>BATCH QC</b>									
BLANK	Uranium-238	24678-82-8	2.9e-02	0.029	pCi/g	01/13/05	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	8.6e+01	113.427	% Recov	01/13/05	75.000	125.000	

# WSCF

## ANALYTICAL COMMENT REPORT

Attention:  
Project Number

Steve Trent  
F03-006

Group #: WSCF20042436

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		<p>ICP-MS: Prep blank evaluated, no affect on sample data LCS- Mercury biased high; sample results &gt; MDL E flagged All other LCS results within Manufacturer's specifications</p> <p>ORGANICS: Sample concentrations are corrected for moisture and reported as dry weight basis. g</p>

Lab Areas: VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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# WSCF

## TENTATIVELY IDENTIFIED PEAK REPORT

**Attention:** Steve Trent      **Group #:** WSCF20042436  
**Project Number** F03-006 :200-PW-2/PW-4

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error			13	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error			14	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	PB-214 Count Error			14	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error			17	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	TL-208 Count Error			17	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error			17	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	BI-212 Count Error			25	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	SN-126 Count Error			29	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	AM-241 Count Error			29	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	TH-234 Count Error			31	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	CS-134 Count Error			38	%
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	CS-134			0.034	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	TL-208			0.19	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	BI-212			0.47	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	BI-214			0.54	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	PB-214			0.61	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	AC-228			0.63	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	PB-212			0.65	pCi/g
W040002628	B1B580	TRENT	Gamma Energy Analysis-grd H2O	K-40			9.0	pCi/g
W040002628	B1B580	TRENT	SW-846 8270B Semi-Vols	SMP 14.632 Di-n-butylphthalate	84-74-2	14.63211	4.2e +02	ug/kg

RQ=Result Qualifier

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*Groundwater Remediation Program*

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# WSCF

## METHOD REFERENCES REPORT

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-212-411	Determination of Soil pH Measurement EPA SW-846 9045C	SOIL AND WASTE pH
LA-503-401	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY EPA-600/4-86-024 300.7	Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
LA-508-415	LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS None	No reference to any industry method.
LA-508-471	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP None	No reference to any industry method.
LA-508-481	LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE None	No reference to any industry method.
LA-519-412	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C EPA-600/4-79-020 160.3 Standard Methods 2540B	RESIDUE, TOTAL Total Solids Dried at 103-105 C
LA-523-443	LA-523-443: GAS CHROMATOGRAPH ANALYSIS OF GASOLINE RANGE TOTAL PETROLEUM HYDROCA WDOE TPH NWTPH-G	Volatile Petroleum Products Method for Soil and Water

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at  
<\\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf>. This document includes on-line  
links to full-text versions of the procedures and methods, where available.

# WSCF

## METHOD REFERENCES REPORT

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846 EPA SW-846 8000B EPA SW-846 8260B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C EPA SW-846 8000B EPA SW-846 8270C	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
LA-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY EPA-600/R-94-111 300	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC EPA-600/4-79-020 335.2	Cyanide, Total
NWTPH	NWTPH-Diesel and/or Gasoline WDOE NWTPH-Dx/Gx	Total Petroleum Hydrocarbons - Diesel/Gasoline

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at  
\\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line  
links to full-text versions of the procedures and methods, where available.

Report Date: 18-jan-2005

Report #: WSCF20042436

Report WGPPM/O

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## W13q Worklist/Batch/QC Report for Group# WSCF20042436

WL#	S#	Batch	QC#	Tray	Type	Sample#	Test
				SAMPLE		W040002628	Percent Solids
				SAMPLE		W040002628	pH Soil and Waste Measurement
24521	1	24879	28166	BLANK			ICP-2008 MS All possible metal
24521	2	24879	28166	LCS			ICP-2008 MS All possible metal
24521	17	24879	28166	MS		W040002599	ICP-2008 MS All possible metal
24521	18	24879	28166	MSD		W040002599	ICP-2008 MS All possible metal
24521	4	24879	28166	MS		W040002619	ICP-2008 MS All possible metal
24521	5	24879	28166	MSD		W040002619	ICP-2008 MS All possible metal
24521	8	24879	28166	SAMPLE		W040002628	ICP-2008 MS All possible metal
24521	12	24879	28166	MS		W040002681	ICP-2008 MS All possible metal
24521	13	24879	28166	MSD		W040002681	ICP-2008 MS All possible metal
24521	0	24879	28166	SPK-RPD		W040002681	ICP-2008 MS All possible metal
				28228	BLANK		Cyanide by Midi/Spectrophotom
				28228	BLNK-PREP		Cyanide by Midi/Spectrophotom
				28228	LCS		Cyanide by Midi/Spectrophotom
				28228	MS	W040002627	Cyanide by Midi/Spectrophotom
				28228	MSD	W040002627	Cyanide by Midi/Spectrophotom
				28228	SPK-RPD	W040002627	Cyanide by Midi/Spectrophotom
				28228	SAMPLE	W040002628	Cyanide by Midi/Spectrophotom
24532	1	24890	28229	BLANK			Strontium 89/90
24532	2	24890	28229	LCS			Strontium 89/90
24532	3	24890	28229	DUP		W040002627	Strontium 89/90
24532	5	24890	28229	SAMPLE		W040002628	Strontium 89/90
24496	1	24865	28261	BLANK			Gamma Energy Analysis-grd H2O
24496	2	24865	28261	LCS			Gamma Energy Analysis-grd H2O
24496	3	24865	28261	DUP		W040002627	Gamma Energy Analysis-grd H2O
24496	5	24865	28261	SAMPLE		W040002628	Gamma Energy Analysis-grd H2O
				28264	BLANK		WTPH-D TPH Diesel Range (Wa)
				28264	LCS		WTPH-D TPH Diesel Range (Wa)
				28264	MS	W040002627	WTPH-D TPH Diesel Range (Wa)
				28264	MSD	W040002627	WTPH-D TPH Diesel Range (Wa)
				28264	SPK-RPD	W040002627	WTPH-D TPH Diesel Range (Wa)
				28264	SAMPLE	W040002628	WTPH-D TPH Diesel Range (Wa)
				28264	SURR	W040002628	WTPH-D TPH Diesel Range (Wa)
				28319	BLANK		SW-846 8270B Semi-Vols
				28319	LCS		SW-846 8270B Semi-Vols
				28319	MS	W040002628	SW-846 8270B Semi-Vols
				28319	MSD	W040002628	SW-846 8270B Semi-Vols
				28319	SAMPLE	W040002628	SW-846 8270B Semi-Vols
				28319	SPK-RPD	W040002628	SW-846 8270B Semi-Vols
				28319	SURR	W040002628	SW-846 8270B Semi-Vols
24655	2	25011	28345	BLANK			Ammonia (N) by IC
24655	15	25011	28345	BLANK			Ammonia (N) by IC
24655	3	25011	28345	LCS			Ammonia (N) by IC
24655	5	25011	28345	DUP		W040002593	Ammonia (N) by IC
24655	6	25011	28345	MS		W040002593	Ammonia (N) by IC
24655	7	25011	28345	MSD		W040002593	Ammonia (N) by IC

24655	10	25011	28345	SAMPLE	W040002628	Ammonia (N) by IC
24662	2	25018	28366	BLANK		Anions by Ion Chromatography
24662	13	25018	28366	BLANK		Anions by Ion Chromatography
24662	3	25018	28366	LCS		Anions by Ion Chromatography
24662	10	25018	28366	SAMPLE	W040002628	Anions by Ion Chromatography
24662	5	25018	28366	DUP	W040002824	Anions by Ion Chromatography
24662	6	25018	28366	MS	W040002824	Anions by Ion Chromatography
24662	7	25018	28366	MSD	W040002824	Anions by Ion Chromatography
24657	1	25013	28406	BLANK		Neptunium by AEA
24657	2	25013	28406	LCS		Neptunium by AEA
24657	3	25013	28406	DUP	W040002628	Neptunium by AEA
24657	5	25013	28406	SAMPLE	W040002628	Neptunium by AEA
24729	1	25087	28429	BLANK		NWTPH-GX TPH Gasoline Range
24729	2	25087	28429	LCS		NWTPH-GX TPH Gasoline Range
24729	4	25087	28429	DUP	W040002627	NWTPH-GX TPH Gasoline Range
24729	5	25087	28429	MS	W040002627	NWTPH-GX TPH Gasoline Range
24729	6	25087	28429	MSD	W040002627	NWTPH-GX TPH Gasoline Range
24729	6	25087	28429	SPK-RPD	W040002627	NWTPH-GX TPH Gasoline Range
24729	8	25087	28429	SAMPLE	W040002628	NWTPH-GX TPH Gasoline Range
24708	1	25064	28432	BLANK		Uranium Isotopics by AEA
24708	2	25064	28432	LCS		Uranium Isotopics by AEA
24708	3	25064	28432	DUP	W040002627	Uranium Isotopics by AEA
24708	5	25064	28432	SAMPLE	W040002628	Uranium Isotopics by AEA
24700	1	25056	28433	BLANK		Plutonium Isotopics by AEA
24700	2	25056	28433	LCS		Plutonium Isotopics by AEA
24700	3	25056	28433	DUP	W040002627	Plutonium Isotopics by AEA
24700	5	25056	28433	SAMPLE	W040002628	Plutonium Isotopics by AEA
24701	1	25057	28434	BLANK		Americium by AEA
24701	2	25057	28434	LCS		Americium by AEA
24701	3	25057	28434	DUP	W040002627	Americium by AEA
24701	5	25057	28434	SAMPLE	W040002628	Americium by AEA
		28440		BLANK		VOA Ground Water Protection
		28440		LCS		VOA Ground Water Protection
		28440		MS	W040002627	VOA Ground Water Protection
		28440		MSD	W040002627	VOA Ground Water Protection
		28440		SPK-RPD	W040002627	VOA Ground Water Protection
		28440		SAMPLE	W040002628	VOA Ground Water Protection
		28440		SURR	W040002628	VOA Ground Water Protection

M8141-SLF-05-044

**ATTACHMENT 3**

**SAMPLE RECEIPT INFORMATION**

Consisting of 4 pages  
Including cover page

1/17/05

**Waste Sampling and Characterization Facility**  
 P.O. BOX 1970 S3-30, Richland, WA 99352  
 PHONE: (509) 373-7004/FAX: (509) 373-7134

**ACKNOWLEDGMENT OF SAMPLES RECEIVED**

File KB

Groundwater Remediation Program

Richland, WA 99354  
 Attn: Steve Trent

Customer Code: GPP  
 PO#: 119153/ES10  
 Group#: 20042436  
 Project#: F03-006  
 Proj Mgr: STEVE TRENT A0-21  
 Phone: 373-5869

The following samples were received from you on 12/15/04. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Matrix	Sample Date
		Tests Scheduled	
W040002628	B1B580	TRENT @2008 @AEA-30 @AEA-31 @AEA-32 @AEA-33 @GEA-GPP @IC-30 @SR89_90 @SVOCGPP @TPHD-WA @TPHG @VOA-GPP CN-02 NH4-IC PERSOLID PH-30	Solid, or handle as if solid 12/15/04

**Test Acronym Description**

Test Acronym	Description
@2008	ICP-2008 MS All possible metal
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopics by AEA
@AEA-33	Neptunium by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@IC-30	Anions by Ion Chromatography
@SR89_90	Strontium 89/90
@SVOCGPP	SW-846 8270B Semi-Vols
@TPHD-WA	WTPH-D TPH Diesel Range (Wa)
@TPHG-WA	NWTPH-GX TPH Gasoline Range
@VOA-GPP	VOA Ground Water Protection
CN-02	Cyanide by Midi/Spectrophotom
NH4-IC	Ammonia (N) by IC
PERSOLID	Percent Solids
PH-30	pH Soil and Waste Measurement

Fluor Hanford Inc.

1/1

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F03-006-272

PAGE 1 OF 2

## COLLECTOR

Pope/Pfister/Wilberg/Tyra

SAMPLING LOCATION (WWD 12/15/04)  
200-PW2/216-S-7, 155.157.5 ft. 153-155.5 ft.

## ICE CHEST NO.

AFS-04-059

## SHIPPED TO

Waste Sampling &amp; Characterization

## COMPANY CONTACT

TRENT, SJ

## TELEPHONE NO.

373-5869

## PROJECT COORDINATOR

TRENT, SJ

F03-006-272

PAGE 1 OF 2

PRICE CODE 8N

DATA TURNAROUND

AIR QUALITY

45 Days /  
45 Days

## FIELD LOGBOOK NO.

## COA

119153ES10

## METHOD OF SHIPMENT

Government Vehicle

## OFFSITE PROPERTY NO.

## BILL OF LADING/AIR BILL NO.

## N/A

## MATRIX\* POSSIBLE SAMPLE HAZARDS/ REMARKS

## PRESERVATION

Cool 4C

Cool 4C

Cool 4C

Cool 4C

Cool 4C

Cool 4C

A=Air

DL=Drum

Liquids

DS=Drum

Solids

L=Liquid

O=Oil

S=Sediment

SE=Sediment

T=Tissue

V=Vegetation

W=Water

WI=Wipe

X=Other

## TYPE OF CONTAINER

aGS\*

aG

aGS\*

P

aG

aG

## NO. OF CONTAINER(S)

3

1

3

1

1

1

## VOLUME

40mL

120mL

40mL

500mL

250mL

250mL

SPECIAL HANDLING AND/OR STORAGE  
RADIOACTIVE TIE TO: B1B592

## SAMPLE ANALYSIS

SEE ITEM (1) IN  
SPECIAL  
INSTRUCTIONSSEE ITEM (2) IN  
SPECIAL  
INSTRUCTIONSTPH-Gasoline  
Range - WTPM-  
G;SEE ITEM (3) IN  
SPECIAL  
INSTRUCTIONSSEE ITEM (4) IN  
SPECIAL  
INSTRUCTIONSSEE ITEM (5) IN  
SPECIAL  
INSTRUCTIONS

## SAMPLE NO.

## MATRIX\*

## SAMPLE DATE

12-15-04 0920

## SAMPLE TIME

✓

✓

✓

✓

✓

✓

B1B580

SOIL

W040002628

## CHAIN OF POSSESSION

## SIGN/ PRINT NAMES

## SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM

## DATE/TIME

RECEIVED BY/STORED IN

## DATE/TIME

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM

## DATE/TIME

RECEIVED BY/STORED IN

## DATE/TIME

RELINQUISHED BY/REMOVED FROM

## DATE/TIME

RECEIVED BY/STORED IN

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## DATE/TIME

RELINQUISHED BY/REMOVED FROM

## DATE/TIME

RECEIVED BY/STORED IN

## DATE/TIME

## LABORATORY SECTION

## RECEIVED BY

## TITLE

## DATE/TIME

## FINAL SAMPLE DISPOSITION

## DISPOSAL METHOD

## DISPOSED BY

## DATE/TIME

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F03-006-272	PAGE 2 OF 2
COLLECTOR Pope/Pfister/Wiberg/Tyra <i>1 AUG 03</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N	DATA TURNAROUND
SAMPLING LOCATION <i>(OU)W 12/15/04 200-PW2/216-5-7, 155-157-8, 153-155.5 ft</i>	PROJECT DESIGNATION 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		SAF NO. F03-006	AIR QUALITY <input type="checkbox"/>	45 Days
ICE CHEST NO. <i>AF3-04-059</i>	FIELD LOGBOOK NO.	COA 119153ES10	METHOD OF SHIPMENT Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

**SPECIAL INSTRUCTIONS**

\*\* The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. FH acknowledges that the analytical holding times (less than 14 days) may not be met by the labs due to the radiological characteristics of the samples.

*TMD 9-22-04*  
(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, 2-Pentanone, Benzyl alcohol, m-Butyldiisobutylene}

(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2-Ethylhexanol, Tributyl phosphate} TPH-Diesel Range - WTPH-D;

(3)Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Gamma Spec - Add-on {Antimony-125, Cesium-134, Radium-226, Radium-228, Tin-126} Isotopic Plutonium; Americium-241; Isotopic Uranium; Neptunium-237; Strontium-89,90 -- Total Sr;

(4)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Selenium, Uranium} ICP/MS - 200.8 (Hg) {Mercury} ICP Metals - 6010A (Add-on) {Bismuth, Boron}

(5)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Cyanide (Total) - 335.2; Cations (IC) - 300.7 (Nitrogen in ammonium) pH (Soil) - 9045;